AMENDMENTS TO THE CLAIMS

Please amend the claims as follows. The following is a copy of Applicant's claims that identifies language being added with underlining ("like this"), and language being deleted with strikethrough ("~~like this~~") or double brackets ("[[like this]]"), as is applicable:

1. (Currently Amended) An immunological assay system, comprising:

a vessel capable of containing an assay sample and a reagent,

wherein the vessel comprises a bottom with an uneven surface, wherein the bottom of the vessel comprises a filter material chosen from at least one of the following: polypropylene with 0.45 micron (μm)-sized pores; cellulose nitrate with 0.45 μm-sized pores; nylon 6,6 with 0.45 μm-sized pores; nylon 6,6 with 1.2 μm-sized pores; HPVM membrane with 0.2 μm-sized pores; polyvinylidene fluoride (PVDF) with 1.0 μm-sized pores; PVDF with 1.2 μm-sized pores; PVDF with 0.2 μm-sized pores; and PVDF with 0.25 μm-sized pores;[[, and]]

~~wherein the bottom of the vessel comprises a filter material chosen from at least one of the following: a polypropylene; a cellulose nitrate; a nylon; polyvinylidene fluoride; and HPVM membrane, the filter material including a plurality of pores with a pore size from about 0.1 microns to about 3 microns;~~

an image acquisition system in close proximity to the vessel,

wherein the image acquisition system is designed to detect the presence of interactions between components in the assay sample and the reagent, wherein said interactions are evidenced by agglutination,

wherein the image acquisition system consists of a flow cytometer or a capillary cytometer, and wherein the image acquisition system in close proximity to the sample separation system; and

an incubator in which the vessel may be placed, wherein the incubator houses the vessel while the assay sample and the reagents react.

2. (Canceled)

3. (Previously presented) The immunological assay system of claim 1, further comprising a sample separation system in close proximity to the incubator, wherein the sample separation system is designed to separate the assay sample and the reagents into various components.

4. (Canceled)

5. (Previously presented) The immunological assay system of claim 1, further comprising a robotic pipettor including a robotic arm within reaching distance of the vessel, the incubator, the sample separation system and the image acquisition system, wherein the robotic pipettor is designed to transfer the assay sample or the reagents between the vessel, incubator, the sample separation system and the image acquisition system.

6. – 7. (Canceled)

8. (Previously presented) The system of claim 3, wherein the sample separation system is a centrifuge.

9. (Canceled)

10. (Original) The system of claim 1, wherein the assay sample comprises red blood cells and antibodies.

11. (Original) The system of claim 1, further comprising means for spreading the reacted sample and reagent components evenly over the bottom surface of the vessel.

12. (Original) The system of claim 11, wherein the means for spreading the reacted sample and reagent components evenly over the bottom surface of the vessel is a centrifuge.

13. (Original) The system of claim 1, further comprising means for analyzing the reacted components on the bottom surface of the vessel.

14. (Canceled)

15. (Previously presented) An immunological assay system, comprising:

a reaction vessel comprising a bottom with an uneven surface, wherein the bottom of the vessel comprises a filter material chosen from at least one of the following: polypropylene with 0.45 micron (μm)-sized pores; cellulose nitrate with 0.45 μm-sized pores; nylon 6,6 with 0.45 μm-sized pores; nylon 6,6 with 1.2 μm-sized pores; HPVM membrane with 0.2 μm-sized pores; polyvinylidene fluoride (PVDF) with 1.0 μm-sized pores; PVDF with 1.2 μm-sized pores; PVDF with 0.2 μm-sized pores; and PVDF with 0.25 μm-sized pores;

an incubator in which the vessel can be placed, wherein the incubator houses the vessel while the assay sample and the reagents react;

a dilute concentration of an immunohematological sample;

a dilute concentration of a reagent;

an image acquisition apparatus, wherein the image acquisition apparatus consists of a flow cytometer or a capillary cytometer, wherein the cytometer is designed to detect the presence of interactions between components in the assay sample and the reagent, wherein the interactions are evidenced by agglutination; and

a centrifugation system configured of a shape and size so as to allow the reaction vessel to be disposed therein.

16. – 17. (Canceled)

18. (Original) The system of claim 15, wherein the immunohematological sample comprises at least one of red blood cells, antigens, and alloantibodies.

19. (Original) The system of claim 15, wherein the reagent comprises at least one of an antibody and patient plasma.

20. (Original) The system of claim 15, wherein the system detects at least one of A-antigen, B-antigen, Rh(D)-antigen, Kell antigen, Duffy antigen, antibody, and alloantibody.

21. (Original) The system of claim 15, wherein the system detects at least two of A-antigen, B-antigen, Rh(D)-antigen, Kell antigen, Duffy antigen, antibody, and alloantibody.

22. (Original) The system of claim 15, wherein the system detects at least three of A-antigen, B-antigen, Rh(D)-antigen, Kell antigen, Duffy antigen, antibody, and alloantibody.

23. (Previously presented) An immunological assay method comprising:

providing a vessel having a bottom with an uneven surface, wherein the bottom of the vessel comprises a filter material chosen from at least one of the following: polypropylene, cellulose nitrate, nylon, polyvinylidene fluoride, and HPVM membrane, the filter material including a plurality of pores with a pore size from about 0.1 microns to about 3 microns;

reacting an immunological sample and a reagent mixture in the vessel;

centrifuging the sample and reagent mixture in the vessel; and

analyzing the reacted components on the bottom surface in the vessel to determine the presence of interactions between the sample and reagent components, wherein the interactions are evidenced by agglutination, and wherein the interactions are analyzed via a flow cytometer or a capillary cytometer.

24. (Original) The method of claim 23, wherein the centrifugation is at low speed.

25. (Original) The method of claim 24, wherein the centrifugation at low speed comprises centrifugation at a maximum rate of approximately 1,000 *g*.

26. (Original) The method of claim 24, wherein the centrifugation at low speed comprises centrifugation at a rate from approximately 250 *g* to approximately 400 *g*.

27. (Original) The method of claim 23, further comprising separating from the vessel any portion of the sample and reagent mixture that did not react.

28. (Original) The method of claim 23, further comprising incubating the sample and reagent mixture.

29. (Original) The method of claim 23, wherein the sample and reagent mixture comprises red blood cells and antibodies.

30. (Original) The method of claim 23, wherein the uneven surface causes the interacted components in the sample to spread evenly over the bottom surface of the vessel during centrifugation, without migrating to a single area within the vessel.

31. (Original) The method of claim 23, wherein the vessel comprises a filter including an inert material, and a plurality of pores.

32. (Canceled)

33. (Original) The method of claim 31, wherein the filter comprises a material selected from the group consisting of: polypropylene with 0.45 micron (μm)-sized pores; cellulose nitrate with 0.45 μm-sized pores; nylon 6,6 with 0.45 μm-sized pores; nylon 6,6 with 1.2 μm-sized pores; HPVM membrane with 0.2 μm-sized pores; polyvinylidene fluoride (PVDF) with 1.0 μm-sized pores; PVDF with 1.2 μm-sized pores; PVDF with 0.2 μm-sized pores; and PVDF with 0.25 μm-sized pores.

34. (Canceled)

35. (Original) The method of claim 23, wherein the centrifugation is for a short period of time.

36. (Original) The method of claim 23, wherein the centrifugation is for a maximum time of approximately 1 minute.

37. (Original) The method of claim 23, wherein reacting the sample and reagent mixture comprises incubating the sample and reagent mixture.

38. (Original) The method of claim 23, wherein the centrifugation is at low speed and for a short period of time.

39. (Previously presented) An immunological assay method, comprising:

mixing a diluted immunohematological sample with a diluted reagent to form a sample mixture in a vessel with an uneven bottom surface, wherein the bottom of the vessel comprises a filter material chosen from at least one of the following: polypropylene with 0.45 micron (μm)-sized pores; cellulose nitrate with 0.45 μm-sized pores; nylon 6,6 with 0.45 μm-sized pores; nylon 6,6 with 1.2 μm-sized pores; HPVM membrane with 0.2 μm-sized pores; polyvinylidene fluoride (PVDF) with 1.0 μm-sized pores; PVDF with 1.2 μm-sized pores; PVDF with 0.2 μm-sized pores; and PVDF with 0.25 μm-sized pores;

analyzing the sample mixture via flow cytometry; and

determining whether a predetermined component is present in the immunohematological sample by determining the presence of agglutination with the flow cytometry; and

spreading the sample mixture over a bottom surface of a reaction vessel through low speed centrifugation in order to facilitate interactions between reaction components.

40. (Original) The method of claim 39, wherein the immunohematological sample comprises at least one of red blood cells, antigens, and alloantibodies.

41. (Original) The method of claim 39, wherein the reagent comprises at least one of an antibody and patient plasma.

42. (Original) The method of claim 39, wherein the predetermined component is at least one of A-antigen, B-antigen, Rh(D)-antigen, Kell antigen, Duffy antigen, antibody, and alloantibody.

43. (Original) The method of claim 39, wherein the predetermined component is at least two of A-antigen, B-antigen, Rh(D)-antigen, Kell antigen, Duffy antigen, antibody, and alloantibody.

44. (Original) The method of claim 39, wherein the predetermined component is at least three of A-antigen, B-antigen, Rh(D)-antigen, Kell antigen, Duffy antigen, antibody, and alloantibody.

45. (Original) The method of claim 39, further comprising:

spreading the sample mixture over a bottom surface of a reaction vessel through vacuum filtration.

46. (Canceled)

47. (New) An immunological assay system, comprising:

a vessel capable of containing an assay sample and a reagent,

wherein the vessel comprises a bottom with an uneven surface, wherein the uneven surface comprises a filter material immediately adjacent to the bottom of the vessel configured to cause reacted components in the assay sample to spread out over the bottom surface of the vessel, wherein the filter material is chosen from at least one of the following: polypropylene with 0.45 micron (μm)-sized pores; cellulose nitrate with 0.45 μm-sized pores; nylon 6,6 with 0.45 μm-sized pores; nylon 6,6 with 1.2 μm-sized pores; HPVM membrane with 0.2 μm-sized pores; polyvinylidene fluoride (PVDF) with 1.0 μm-sized pores; PVDF with 1.2 μm-sized pores; PVDF with 0.2 μm-sized pores; and PVDF with 0.25 μm-sized pores;

an image acquisition system in close proximity to the vessel,

wherein the image acquisition system is designed to detect the presence of interactions between components in the assay sample and the reagent, wherein said interactions are evidenced by agglutination,

wherein the image acquisition system consists of a flow cytometer or a capillary cytometer, and wherein the image acquisition system in close proximity to the sample separation system; and

an incubator in which the vessel may be placed, wherein the incubator houses the vessel while the assay sample and the reagents react.

48. (New) An immunological assay system, comprising:

a vessel capable of containing an assay sample and a reagent,

wherein the vessel comprises a bottom with an uneven surface, wherein the uneven surface comprises a filter material immediately adjacent to the bottom of the vessel configured to cause reacted components in the assay sample to spread out over the bottom surface of the vessel, wherein the filter material is chosen from at least one of the following: polypropylene, cellulose nitrate, nylon, polyvinylidene fluoride, and HPVM membrane, the filter

material including a plurality of pores with a pore size from about 0.1 microns to about 3 microns;

an image acquisition system in close proximity to the vessel,

wherein the image acquisition system is designed to detect the presence of interactions between components in the assay sample and the reagent, wherein said interactions are evidenced by agglutination, and wherein the image acquisition system consists of a flow cytometer or a capillary cytometer.